

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claim 1. (original) A process of preparing a semiconductive film comprising:
applying a solution containing a soluble polymer and a soluble metal precursor onto a substrate to form a polymer and metal containing layer thereon;
treating said substrate including said polymer and metal containing layer for a time to form a coherent composite film;
heating said substrate in an oxygen-containing atmosphere at temperatures characterized as sufficient to remove said polymer from said composite film and form a metal oxide film; and,
reacting said metal oxide film with a sulfur-, selenium- or tellurium-containing gas under conditions sufficient to form a semiconductive film.

Claim 2. (original) The process of claim 1 wherein said solution is an aqueous solution having a pH of from about 4 to about 7.

Claim 3. (original) The process of claim 1 wherein said semiconductive film contains a single metal selected from the group consisting of cadmium, indium, zinc, copper and titanium.

Claim 4. (original) The process of claim 1 wherein said metal oxide film is cadmium oxide and said semiconductive film is selected from the group consisting of cadmium sulfide, cadmium selenide, cadmium telluride or mixtures thereof.

Claim 5. (original) The process of claim 2 wherein said process is organic-solvent free.

Claim 6. (original) The process of claim 1 wherein said metal oxide film is zinc oxide and said semiconductive film is selected from the group consisting of zinc sulfide, zinc selenide, zinc tellenide or mixtures thereof.

Claim 7. (original) The process of claim 1 wherein said semiconductive film is a dye-sensitized titanium oxide film.

Claim 8. (original) The process of claim 1 wherein said metal oxide film is a mixed metal oxide selected from the group consisting of zinc and cadmium, copper and indium, copper and gallium, cadmium and indium, and copper, gallium and indium.

Claim 9. (original) The process of claim 8 wherein said semiconductive film is selected from the group consisting of zinc cadmium sulfide, zinc cadmium selenide, zinc cadmium telluride or mixtures thereof.

Claim 10. (original) The process of claim 8 wherein said semiconductive film is selected from the group consisting of copper indium sulfide, copper indium selenide, copper indium telluride or mixtures thereof.

Claim 11. (original) The process of claim 8 wherein said semiconductive film is selected from the group consisting of cadmium indium sulfide, cadmium indium selenide, cadmium indium telluride or mixtures thereof.

Claim 12. (original) The process of claim 8 wherein said semiconductive film is selected from the group consisting of copper gallium sulfide, copper gallium selenide, copper gallium telluride or mixtures thereof.

Claim 13. (original) The process of claim 8 wherein said semiconductive film is copper gallium indium selenide.

Claim 14. (original) The process of claim 1 wherein said soluble polymer is selected from the group consisting of poly(vinyl alcohol), polyethylene glycol, poly(acrylic acid), poly(diallyldimethyl ammonium chloride), and polyethylenimine.

Claim 15. (original) The process of claim 1 wherein said soluble polymer is polyvinyl alcohol.

Claim 16. (canceled)

Claim 17. (original) The process of claim 1 wherein said treating includes drying at temperatures characterized as insufficient to remove said polymer but sufficient to form the coherent composite film.

Claim 18. (original) A composition of matter comprising a solution of a water-soluble metal compound and a water-soluble polymer, said solution having a pH of from about 4 to about 7 and characterized as organic-solvent free.

Claim 19. (original) The composition of claim 18 wherein said water-soluble polymer is selected from the group consisting of polyvinyl alcohol, polyethylene glycol, poly(acrylic acid), poly(diallyldimethyl ammonium chloride), and polyethylenimine.

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Claim 20. (original) The composition of claim 18 wherein said water-soluble metal contains a single metal selected from the group consisting of cadmium, indium, zinc, copper, gallium and titanium.